II. CLAIMS

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (currently amended): Device for continuous evaporation of a high temperature superconductor ~~(13)~~ onto a substrate ~~(7)~~ in a vacuum ~~(6)~~ comprising:

a. a refilling device ~~(5)~~ with a stock of high temperature superconductor material ~~(13)~~;

b. an evaporation device ~~(1)~~ which evaporates the high temperature superconductor material ~~(13)~~ in an evaporation zone by a beam ~~(2)~~ of an energy transferring medium;

c. a conveyor ~~(3)~~ which transports the high temperature superconductor material ~~(13)~~ from the refilling device ~~(5)~~ to the evaporation zone; wherein ~~in a way that~~

d. ~~the high temperature superconductor material (13) delivered to the evaporation zone is evaporated essentially without residues,~~ **~~characterized in that~~** the evaporation device is adapted to pre-heat the high-temperature superconductor material in a first part of the evaporation zone by a first energy of the beam of energy transferring medium and to evaporate the pre-heated high-temperature superconductor material in a second part of the evaporation zone by a second energy of the beam of energy transferring medium, wherein said second energy is greater than said first energy.

~~e. the conveyor transports the high temperature superconductor material (13) to the evaporation zone as a granulate (13) with a grain size of 0.05 – 0.5 mm~~

Claim 2 (currently amended): Device according to claim 1, further comprising a means to scan the beam ~~(2)~~ of the evaporator ~~(1)~~ in at least one direction over the evaporation zone.

Claim 3 (currently amended): Device according to claim 2, wherein the means scans ~~are scanning~~ the beam ~~(2)~~ at a repetition frequency of greater than about 50 Hz ~~>50 Hz,~~ and preferably at about 90 Hz.

Claim 4 (currently amended): Device according to ~~one of the~~ claims ~~1-3~~, further comprising a means to first pre-heat and then evaporate the high temperature superconductor material ~~(13)~~ delivered to the evaporation zone by the conveyor ~~(3)~~.

Claim 5 (currently amended): Device according to claim 4, where the evaporation device comprises at least two power levels ~~(P_1,P_2)~~ for the beam ~~(2)~~, ~~preferably~~ with a narrow transition width ~~(Δx)~~ between the first and the second power level to achieve a linear gradient of ~~the~~ a thickness profile ~~D(x)~~ of ~~the~~ a delivered high temperature superconductor material ~~(13)~~.

Claim 6 (currently amended): Device according to claim 5, wherein the conveying speed of the conveyor ~~(3)~~ can be adjusted to satisfy at least one of the conditions ~~such~~ that ~~the~~ an angle of ~~the~~ a slope α is less than about 20°, ~~< 20°~~ and ~~/ or~~ the length of the evaporation zone is less than about 10 mm ~~< 10 mm~~.

Claim 7 (currently amended): Device according to one of the claims 5 or 6, wherein the beam ~~(2)~~ of the energy transferring medium can be focused in such a way that while scanning it reaches ~~its~~ a minimum width when it is focused approximately ~~located essentially~~ at the upper edge of the slope.

Claim 8 (currently amended): Device according to ~~one of the~~ claims ~~1-7~~, wherein the conveyor ~~(3)~~ and ~~/ or~~ the substrate ~~(7)~~ can be tilted to compensate for an inclined directional pattern of the material evaporating from the conveyer ~~(3)~~.

Claim 9 (currently amended): Device according to ~~one of the~~ claims 1~~-8~~, wherein the evaporation device ~~(1)~~ comprises an electron beam evaporator which can be ~~preferably~~ modulated.

Claim 10 (currently amended): Device according to ~~one of the~~ claims 1~~-9~~, wherein the high temperature superconductor material ~~(13)~~ is conveyed into the evaporation zone in the shape of a line with a width of greater than about 3 mm and less than about 30 mm ~~preferably between 3 and 30mm~~.

Claim 11 (currently amended): Device according to ~~one of the~~ claims 1~~-10~~, wherein the conveyor transports the high temperature superconductor material ~~(13)~~ to the evaporation zone as a granulate ~~(13)~~ with a grain size of greater than about 0.1 mm and less than about 0.2 mm ~~0.1 – 0.2 mm~~.

Claim 12 (currently amended): Device according to ~~one of the~~ claims 1~~-11~~, wherein the conveyor ~~(3)~~ can be cooled and comprises at least one of a rotating turntable, ~~and / or~~ a rotating drum, ~~and / or~~ a vibration conveyor, ~~and / or~~ a conveyor belt, ~~and / or~~ a screw conveyor, and a ~~or~~ slide.

Claim 13 (currently amended): Device according to ~~one of the~~ claims 1~~-12~~, wherein the refilling device is designed as a funnel ~~(5)~~ and ~~/ or~~ can be heated.

Claim 14 (currently amended): Device according to ~~one of the~~ claims 1~~-13~~, wherein the refilling device ~~(5)~~ has a separate pumping device ~~(12)~~.

Claim 15 (currently amended): Device according to claim 14, wherein the refilling device ~~(5)~~ is designed as a funnel ~~(5)~~ which can be heated in a ~~the~~ bottom section, and the separate pumping device ~~(12)~~ is designed as a suction pipe ~~(12)~~ which protrudes into the bottom section of the funnel ~~(5)~~.

Claim 16 (currently amended): Device according to claim 1 ~~one of the previous claims~~, wherein the high temperature superconductor material ~~(13)~~ is a mixture of different compounds, so that upon evaporation on temporal average the desired composition of the high temperature superconductor material ~~(13)~~ is deposited.

Claim 17 (currently amended): Device according to claim 1 ~~one of the previous claims~~, further comprising a means ~~(9, 10) which enable~~ to supply a gas~~, preferably oxygen,~~ close to the substrate ~~(7)~~.

Claim 18 (currently amended): Device according to claim 1 ~~one of the previous claims~~, further comprising a means ~~(8)~~ to heat and ~~/ or to~~ move the substrate ~~(7)~~ relative to the evaporation zone.

Claim 19 (currently amended): Device according to claim 1 ~~one of the previous claims~~, further comprising a means to measure an ~~the~~ evaporation rate by atomic absorption spectroscopy~~, preferably of a Cu line of the evaporating high temperature superconductor material~~.

Claim 20 (currently amended): Device according to claim 19, further comprising a means to partially shade the vapor of the high temperature superconductor material ~~at the location of the~~ where a measuring light beam is located to avoid saturation of the absorption line.

Claim 21 (currently amended): Device according to claim 1 ~~one of the previous claims~~, further comprising a second ~~at least another~~ refilling device having ~~with~~ source material for an auxiliary layer of the high temperature superconductor film.

Claim 22 (currently amended): Device according to claim 21, further comprising a means ~~to connect~~ for connecting said second ~~at least another~~ refilling device ~~and~~ to the first refilling device, and ~~(5)~~ for holding a stock of high temperature superconductor material ~~(13)~~ sequentially with the conveyor ~~(3)~~.

Claim 23 (currently amended): Method for continuously evaporating a high temperature superconductor coating onto a substrate ~~(7)~~ in a vacuum ~~(6)~~ comprising the steps of:

a. continuously conveying a granulate ~~(13)~~ of a high temperature superconductor material into a evaporation zone; ~~and~~

b. ~~operating a beam (2) of an energy transferring medium, so that the delivered granulate (13) is evaporated essentially without residues within the evaporation zone, **characterized in that**~~ pre-heating the high-temperature superconductor material in a first part of the evaporation zone by a first energy of the beam of energy transferring medium; and

c. ~~the high temperature superconductor material (13) is conveyed to the evaporation zone as granulate (13) with a grain size of 0.05 – 0.5 mm~~ evaporating the pre-heated high-temperature superconductor material in a second part of the evaporation zone by a second energy of the beam of energy transferring medium so that the delivered granulate is evaporated essentially without residues within the evaporation zone.

Claim 24 (canceled)

Claim 25 (canceled)

Claim 26 (canceled)

Claim 27 (canceled)

Claim 28 (canceled)